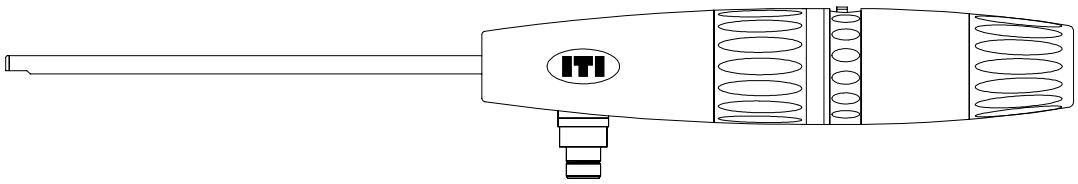
OPERATION MANUAL

SERIES 123000

BORESCOPES



INSTRUMENT TECHNOLOGY, INC.

POB 381, Westfield, MA 01086
33 Airport Road, Westfield, MA 01085

Tel: (413) 562-3606 Fax: (413) 568-9809 Email: iti@scopes.com www.scopes.com

INTRODUCTION

Thank you for selecting Instrument Technology, Inc. (ITI) to fulfill your remote viewing needs.

Since 1967, ITI has been the Leader in Remote Viewing. The only company of its type doing all its manufacturing in the United States, ITI consistently provides cutting edge technology to customers world-wide.

ITI specializes in the design, development and manufacture of Remote Viewing Instruments (RVI) and systems including Borescopes, Fiberscopes and Videoscopes.

ITI offers over 2,000 standard products as well as products custom designed for unique applications. No matter which ITI product is used, our customers find they are able to observe hostile and difficult to reach environments never dreamed possible before. Though ITI products can solve many remote viewing problems, it is always best to select the proper instrument for any given application. Only then can success be assured.

Your satisfaction is guaranteed with all products purchased from Instrument Technology, Inc. Feel free to contact ITI or your local ITI Representative with any questions.

WARRANTY

Instrument Technology, Inc. warrants that the equipment is fit for the purposes described herein for a period of one year after the date of shipment when used in accordance with the directions for use, and agrees to repair or replace any such defective component part at no cost to the customer.

There are no other express or implied warranties. ITI's sole obligation and purchaser's exclusive remedy for breach of any warranty shall be limited to repair or replacement of the product at the option of ITI. This warranty does not cover, and ITI will not be liable for any resulting direct, proximate, incidental or consequential damages. This warranty does not apply if the product has been subject to misuse, negligence, accident or improper application, nor shall ITI be responsible for work done or repairs made by others.

PRODUCT SPECIFICATIONS

The following chart summarizes ITI's Series 12300 Borescope Line, representing over 800 combinations.

Model	Diameter		RMS* Diameter		Working Length			Body Style				
Number	mm	inch	mm	inch	cm (inch)			Std	OS	AS	ZM	SZ
123004	4	.159"	4.8	.187"	10 (4)	18 (7)	25 (10)	X	X			
123006	6	.238"	7.6	.300"	23.5 (9.2)	36.5 (14.3)	49.4 (19.5)	X	X			
123008	8	.315"	9.5	.375"	30 (11.5)	50 (19.5)	70 (27.5)	X	X	X		
123010	10	.396"	11.1	.437"	40 (15.5)	60 23.5)	80 (31.5)	X	X	X		
123016	16	.625"	17.5	.687"	50 (20)	80 (30)	110 (44)	X		X	X	X
123019	19	.750"	22.2	.875"	50 (20)	80 (30)	110 (44)	X		X	X	X

*** Rotary Mirror Sleeves (RMS) are available on F LOS Standard Body scopes.**

OPERATING INSTRUCTIONS

OVERVIEW OF APPLICATIONS

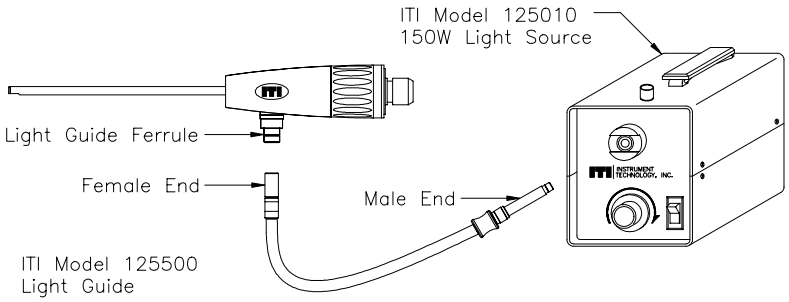
ITI Rigid Borescopes are versatile tools that allow for inspection or observation into a normally inaccessible area. Whether the barrier be physical, such as the walls of a casting or a pipe, or environmental, temperature or pressure extremes, ITI scopes can get you inside to see what's happening.

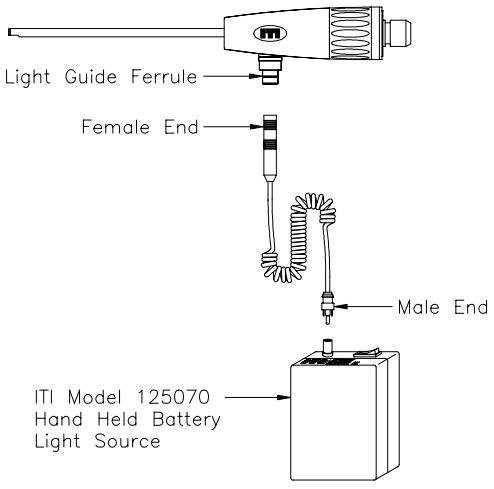
While ITI Rigid Borescopes are designed and manufactured to provide years of trouble free use, please understand that all borescopes are delicate glass instruments and should be treated accordingly. Proper handling and cleaning techniques will greatly increase life of this instrument. Only trained operators should handle borescopes.

ITI Series 12300 Rigid Borescopes use a hard optic lens system for image transmission and fiber optics for illumination. The optical system is computer designed and manufactured to critical tolerances for optimum resolution, brightness and clarity.

CONNECT LIGHT SOURCE

Connect female end of a flexible light guide to ferrule on Borescope body. Connect male end of light guide to an ITI Light Source, see diagram. Switch Light Source on and adjust Light Source intensity to the desired level, please refer to Light Source Operation Manual.

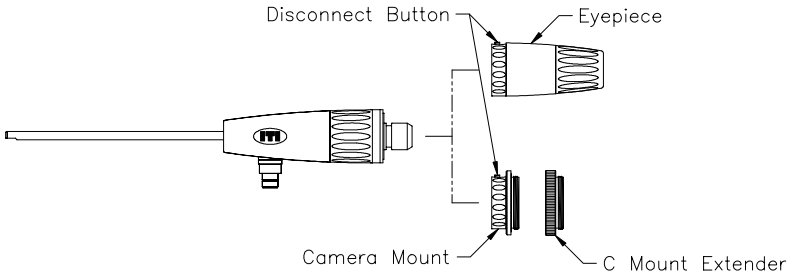




ATTACHING EYEPIECE OR CAMERA MOUNT

ITI Series 123000 Borescopes feature ITI's new quick-disconnect to attach Eyepiece or Camera Mount to Borescope.

To attach Eyepiece or Camera Mount to Borescope, hold Borescope body and slide Eyepiece or Camera Mount onto the back of the Borescope. Gently push together until a "click" is heard, indicating proper connection. Confirm full connection by looking at the Disconnect Button to see that it is not depressed into the recess on the Eyepiece or Camera Mount.



NOTE : The Camera Mount is intended for use with a camera having either a C or CS Mount thread. If the camera has a C Mount type, simply screw the camera onto the back of the Camera Mount. If a CS Mount camera is to be used, an optional ITI C Mount Extender must be threaded onto the Camera Mount prior to attaching the camera. Please consult your camera's user manual to determine which type of camera you have.

To remove the Eyepiece or Camera Mount from Borescope, simply press the Disconnect Button down into the recess and gently pull from the Borescope.

CAUTION

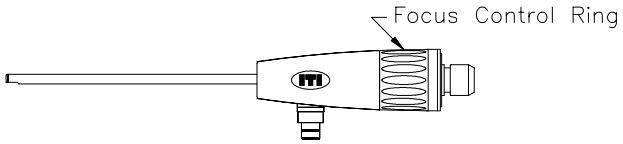
Care should be taken when handling the Eyepiece while not attached to the Borescope as debris may fall onto the eyepiece lens.

INSERT BORESCOPE

Carefully guide borescope through suitable opening in the cavity to be inspected. Take extreme caution not to force or bend borescope. Should you encounter resistance, remove borescope and review your inspection procedure. Ascertain whether sufficient clearance exists for the selected probe diameter and length.

FOCUS BORESCOPE

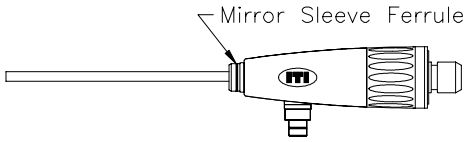
Adjust focus of borescope to object distance and your eyesight by rotating Focus Control Ring. It is recommended that you start with borescope out of focus. Rotate Focus Control Ring so that focus is achieved and continue to rotate ring past clear focus. You may then rotate the Focus Control Ring in the opposite direction to re-establish optimal focus.



SPECIAL NOTES

ROTARY MIRROR SLEEVE [RMS]

Borescopes having a forward line-of-sight can be used with an optional RMS for right angle viewing. The borescope must be equipped with a Mirror Sleeve Ferrule to mount the RMS. If the borescope does not have this ferrule, please contact ITI or your local ITI Representative regarding the installation of a RMS. The use of this optional RMS is recommended for 40° and smaller field-of-view borescopes only.



To attach a RMS, simply slide it over the working length until the ring at the base of the RMS is flush with the front of the borescope body.

UV

Borescopes made for UV applications have a UV filter in a removable light guide ferrule. These borescopes are provided with UV and white light ferrules.

INSTRUMENT CARE

CLEANING AFTER USE

Wipe instrument after use with a soft, clean cloth. If the insertion tube is soiled, use a non-abrasive, neutral detergent on a damp cloth to rub down the stainless steel outer tube. Always store the instrument in its protective case.

NOTE: DO NOT IMMERSE INSTRUMENT IN LIQUID.

CLEANING OF OPTICS

Should cleaning of external surfaces be necessary, blow off dust with a triple-filtered, high pressure optical quality dusting spray. Wipe surface with a clean cotton swab moistened with laboratory grade alcohol. Excess alcohol can be blown away with the spray.

For Rotary Mirror Sleeves - **DO NOT** wipe mirror surface. Instead, rinse mirror with alcohol and blow dry dry with the spray.

ITI Model 126110 RVI Cleaning Kit may be used.

PRECAUTIONS

Handle the borescope with care. Do not apply excess force while inserted. A sudden shock or fall is likely to damage your borescope.

- Do not use beyond recommended temperatures:

  Maximum 150° F (65° C)
  Minimum 32° F (0° C)

- Do not allow instrument to contact live or exposed wiring. It is an excellent conductor.

TROUBLE-SHOOTING GUIDE

SYMPTOM	POSSIBLE PROBLEM	REMEDY
Light Guide does not attach to Borescope	Ferrule missing on scope, exposed male thread on body	Replace ferrule on scope
	Ferrule missing on Light Guide, exposed male thread on LG	Replace ferrule on LG
Dark Image	Low Light Source [LS] intensity setting	Increase LS intensity
	Object distance too far or object is extremely dark	Use higher intensity LS
	Dirt on external optical surfaces	Clean optics
	Damaged Light Guide - noticeable damage to LG jacket	Return to ITI for repair
Partial Image	Scope is damaged	Return to ITI for repair
Image Not Clear	Dirt on external optical surfaces	Clean optics
	Scope not focused	Focus scope
	Object distance is out of scope's range	Move scope to proper object distance
	Dirt or liquid on internal optical surfaces	Return to ITI for repair
No Image	No or low LS intensity	Check LS
	Dirt on external optical surfaces	Clean optics
	Scope is damaged	Return to ITI for repair

REPAIR POLICY

If your equipment requires factory attention, contact ITI's Customer Service Dept. at (413) 562-3606 for a Return Authorization Number. Please be prepared to furnish your model and serial numbers. Return the equipment to ITI, freight prepaid.

Ship to:

Instrument Technology, Inc.
33 Airport Road
Westfield, MA 01085-1357

Please note Return Authorization Number on Purchase Orders, and all shipping documents.

Upon receipt of your equipment, ITI will assess its condition to determine if repairs are needed. If repairs are required, we will quote repair costs and a schedule for repairs. Your options at this point are:

1) Accept Repair

To proceed with the repair, ITI will require a purchase order for the full quoted repair price.

2) Decline Repair - Upgrade to a New Instrument

Choosing this option requires a purchase order for the new equipment at its quoted price. ITI will ship out the next available unit.

3) Decline Repair

Please Note - Most repair evaluations require a partial or complete disassembly of the equipment. **Once disassembled, it is impossible to return it to the customer in "as received" condition.** At the customer's option, ITI will either return your equipment in its disassembled state, or dispose of it.